

REMARKS

Claims 1 and 3-18 are currently pending in the application. Claims 3 and 5 stand allowed. Claims 8-11 and 18 have been noted to contain allowable subject matter but stand objected to as being dependent upon a rejected base claim. The Examiner notes that the prior art of record does not anticipate or make obvious the specific combination of materials and/or process steps in the manners required by these claims. By way of this RCE, Applicant has amended claims 1, 4, 6, 8, 10, 13, 16-18 and has submitted new claims 19-31 for the Examiner's consideration. Claims 2, 14 and 15 have been canceled.

With respect to the amendments made herein, claim 1 has been amended to provide cookware having at least one core layer of titanium or titanium alloy. The optional stainless steel core layer has been deleted from amended claim 1. The structure of amended claim 1 is substantially similar to allowed claim 3 and, accordingly, is in allowable condition and the Examiner's favorable action thereon is respectfully requested.

Claim 4 is in independent form and defines cookware made from a multi-layered composite sheet having uniform thermal transfer properties comprising a plurality of roll bonded metal layers including a core layer of stainless steel roll bonded on both sides to immediately-adjacent layers of pure aluminum or Alclad aluminum with outer layers of stainless steel roll bonded to the layers of pure aluminum or Alclad aluminum. Claim 4 covers one of the specific embodiments depicted in Fig. 1 of the application with a stainless steel core layer 4. The specific construction and arrangement of materials, namely, a cook surface of stainless steel roll bonded to a pure aluminum or Alclad layer which, in turn, is roll bonded to a core layer of stainless steel which, in turn, is roll bonded to a layer of pure aluminum or Alclad aluminum which is roll bonded to a lowermost outer surface layer of stainless steel is not disclosed or fairly suggested by any of the prior art of record. Favorable action is respectfully requested.

Claim 6 is directed to a method of making cookware made from a multi-layered composite metal sheet comprising the steps of providing a plurality of metal sheets including a core layer comprising at least one sheet of stainless steel and first and second sheets selected from the group consisting of pure aluminum or Alclad aluminum facing said stainless steel core layer, and a further sheet of a metal selected from the group consisting of aluminum and stainless steel. The plurality of metal sheets

so provided are stacked to form an ordered array wherein the stainless steel sheet is sandwiched between the pure aluminum or Alclad aluminum sheets and the further sheet of aluminum or stainless steel faces one of the pure aluminum or Alclad aluminum sheets. The stacked array is heated to a uniform rolling temperature and then rolled to a desired thickness to form a roll bonded composite sheet. The rolled composite sheet is then drawn to form cookware of a desired configuration comprising in an ordered array a cooking surface formed by a layer of pure aluminum or Alclad aluminum, a thermal barrier layer of stainless steel, a layer of pure aluminum or Alclad aluminum, and a layer of aluminum or stainless steel forming the outer surface of the cookware. None of the cited prior art teaches the ordered array of layers as provided in amended claim 6, nor the process steps defined therein. In particular, Stein specifically details the roll bonding of aluminum and stainless steel where the aluminum is at a much higher temperature than the stainless steel, where the stainless steel is preferably at room temperature. To the contrary, step (d) of amended claim 6 requires that the ordered array be heated to a uniform rolling temperature prior to rolling. Favorable action on amended claim 6 is respectfully requested.

Amended claim 8 is deemed to be in allowable condition because claim 8 was noted to contain allowable subject matter and would be allowed if amended. Accordingly, claim 8 is in independent form and contains all of the limitations of original base claim 6 having a core layer comprising at least one sheet of titanium or titanium alloy.

Claim 9 depends from rewritten claim 8 and should, likewise, be in allowable condition because it depends from an allowed base claim.

Amended claim 10 likewise is in allowable condition because it was indicated to contain allowable subject matter. Claim 10 is in independent form and contains all of the limitations of base claim 6 and original claim 10 therein with respect to the specific heating parameters in step (d) thereof, namely, an oven containing atmospheric oxygen and heating to a rolling temperature between 550°-600°F.

Claim 11 should likewise be in allowable condition because it depends from claim 10 which is an allowable base claim.

Claim 12 depends from claim 11 and should likewise be in allowable condition.

Claim 13 has been amended and is independent form, defining cookware made from a bonded metal composite comprising at least one core layer of stainless steel, upper and lower layers consisting of pure aluminum or Alclad aluminum, wherein each layer is roll bonded to upper and lower sides of the core layer. A further layer of stainless steel is roll bonded to the upper layer of the pure aluminum or Alclad aluminum to define a cook surface of the cookware, and a further layer of stainless steel or aluminum is roll bonded to the lower layer of pure aluminum or Alclad aluminum to define an outer surface of the cookware.

Claim 16 depends from claim 13, wherein the further layer of stainless steel or aluminum defining the outer surface of the cookware is aluminum, and further defines the layer of aluminum as being anodized.

Claim 17 depends from claim 16 and further includes the limitation that the upper layer of pure aluminum or Alclad aluminum forming the cook surface has a non-stick layer applied thereto.

Amended claims 13, 16 and 17 define the several embodiments depicted in Fig. 3 of the present application. Such combinations are not disclosed or fairly suggested in the prior art, and the Examiner's favorable action is respectfully requested.

Amended claim 18 is now in independent form and defines cookware made from a bonded composite comprising a core layer consisting of titanium or titanium alloy, and two outer layers consisting of pure aluminum or Alclad aluminum, each layer roll bonded to upper and lower sides of the core layer. Amendment claim 18 is deemed to be in allowable condition since this cookware construction is not disclosed or suggested in the prior art.

New claim 19 defines one of the cookware embodiments as shown in Fig. 1. The cookware is made from a bonded metal composite comprising (a) a layer of stainless steel at or adjacent a cook surface of the cookware; (b) a layer of pure aluminum or Alclad aluminum bonded to layer (a); (c) a layer of stainless steel bonded to layer (b); (d) a layer of pure aluminum or Alclad aluminum bonded to layer (c); and (e) a layer of stainless steel bonded to layer (d) defining an outer surface of the cookware, whereby layer (c) retards heat flow in a transverse direction to cause said layer (c) to distribute heat uniformly in a lateral direction to prevent hot spots from forming on the cook surface and thereby improve cooking performance. Claim 20 depends from claim 19 and includes a non-stick layer applied to the stainless steel layer (a). No such

combination is disclosed or fairly suggested in the prior art of record, and the Examiner's favorable action is respectfully requested.

New claim 21 defines cookware made from a bonded metal composite which is based upon the various embodiments disclosed in Fig. 2 of the present application and described therein. The cookware comprises (a) a layer of stainless steel at or adjacent a cook surface of the cookware; (b) a layer of pure aluminum or Alclad aluminum bonded to layer (a); (c) a layer of stainless steel bonded to layer (b); (d) a layer of pure aluminum or Alclad aluminum bonded to layer (c); and (e) a layer of aluminum bonded to layer (d) defining an outer surface of the cookware. Claim 22 depends from claim 21 and further specifies that the aluminum layer (e) is anodized, and claim 23 depends from claim 22 further specifying that the layer (a) of stainless steel has a non-stick surface applied thereto. Once again, no such combination is disclosed or fairly suggested in the prior art as now specified in new claims 21-23.

New claim 24 defines one embodiment of the cookware depicted in Fig. 3 of the present specification. The cookware comprises (a) a non-stick layer defining a cook surface of the cookware; (b) a layer of pure aluminum or Alclad aluminum bonded to layer (a); (c) a layer of stainless steel bonded to layer (b); (d) a layer of pure aluminum or Alclad aluminum bonded to layer (c); and (e) a layer of aluminum bonded to layer (d) defining an outer surface of the cookware whereby layer (c) retards heat flow in a transverse direction to cause layer (c) to distribute heat uniformly in a lateral direction to prevent hot spots from forming on the cook surface and thereby improve cooking performance while increasing the life of the non-stick layer due to the absence of hot spots, which typically degrade Teflon®-type non-stick surfaces. Claim 25 is dependent upon claim 24 and further includes the limitation that the aluminum layer (e) has an anodized surface. Once again, no such arrangement of layers in a composite cookware is disclosed or fairly suggested in the prior art. The Examiner's favorable action is respectfully requested.

New claim 26 is, likewise, based on an embodiment depicted in Fig. 3 and comprises bonded layers in order of a non-stick layer defining a cook surface of the cookware, a layer of pure aluminum or Alclad aluminum, a layer of stainless steel, a layer of pure aluminum or Alclad aluminum, and a layer of stainless steel defining an outer surface of the cookware. New claim 27 depends from claim 26 and further defines

the outer layer of stainless steel as a ferromagnetic stainless steel to allow for induction cooking. This construction is, likewise, not disclosed or fairly suggested in the prior art.

New claim 28 defines cookware made from a multi-layered composite having uniform thermal transfer properties wherein the multi-layered composite comprises a plurality of roll bonded metal layers including at least one inner layer of a metal having a coefficient of thermal conductivity lower than adjacent metal layers whereby the inner layer retards heat flow in a transverse direction to distribute heat in a lateral direction to thereby eliminate hot spots across a cook surface thereof so as to improve cooking performance. Claim 29 depends from claim 28 and further includes a non-stick cook surface wherein the life of the non-stick surface is extended due to the elimination of hot spots across the cook surface. The inventive concept set forth in new claims 28 and 29 is not disclosed or fairly suggested in the prior art, and the Examiner's favorable action is respectfully requested.

New claim 30 defines cookware made from a bonded composite comprising, in order, (a) a layer of pure aluminum or Alclad aluminum; (b) a layer of stainless steel bonded to layer (a); (c) a layer of pure aluminum or Alclad aluminum bonded to layer (b); (d) a layer of stainless steel bonded to layer (c); and (e) a layer of pure aluminum or Alclad aluminum bonded to layer (d). New claim 31 depends from claim 30 and further specifies that layer (a) has a non-stick surface applied thereto. Once again, no such cookware construction is taught or fairly suggested in the prior art of record.

The amendments to the claims as well as the new claims are supported by the specification. No new matter has been added.

Finally, Applicant wishes to point out for the record that the 3"x6" "Mini Loaf Pans" referred to by the Examiner in the Advisory Action of February 14, 2005 at www.williams-sonoma.com are not drawn shapes but, rather, are folded from much larger blanks. Note the presence of fold lines at the narrow outside ends of the pans. In addition, these baking pans are 2" deep. That fact, coupled with the fact that the blanks must be folded to fabricate the pans, requires a blank that is at least 10" x 7" in size, much larger than Example 4 of Stein. These pans are, likewise, intended as bakeware, not cookware as claimed. Notice should be taken that the Williams-Sonoma website also distinguishes between bakeware and cookware. Further, these pans are made from aluminized carbon steel, which could not be deep drawn into a 3" x 6" x 2" pan

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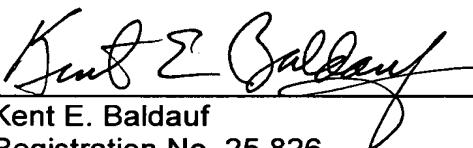
without shearing the thin dipped aluminum coating. Because of this, the pans are fabricated by folding the blank so as not to fracture the thin hot dipped aluminum coating. Once the protective aluminum coating is fractured, the underlying carbon steel would rust after washing, making it unsuitable for future use.

In light of the amendments made herein, taken with the above remarks, the Examiner's favorable action is respectfully requested.

Respectfully submitted,

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